

Nera Mini-C Installation Manual

INMARSAT MINI-C MOBILE EARTH STATION





SAFETY INSTRUCTIONS



WARNING



**ELECTRICAL
SHOCK
HAZARD**

Do not open the equipment unless totally familiar with electrical circuits and service manual.

Only qualified personnel should work inside the equipment.



Do not approach the radome closer than 60 cm when it is transmitting.

Microwave radiation can cause severe injury or illness. Radiation level:
10 W/m² at 60 cm



Turn off the power at the mains switchboard before beginning the installation. Post a sign near the switch to indicate it should not be turned on while the equipment is being installed.

Fire, electrical shock or serious injury can result if the power is left on or is applied while the equipment is being installed.



CAUTION

Confirm that the power supply voltage is compatible with the voltage rating of the equipment.

Connection to the wrong power supply can cause fire or equipment damage. The voltage rating appears on the label at the rear of the display unit.

Use the correct fuse.

Use 10 A fuse (default setting) for 12 VDC ship's mains, or replace the fuse to 5 A (supplied as spare parts) with 24 VDC.

Use of wrong fuse can result in damage to the equipment.

Keep the following compass safe distances.

	Standard	Steering
Antenna Unit IC-116	0.3 m	0.3 m
Communication Unit IC-216	0.3 m	0.3 m
AC/DC Power Supply Unit PR-240-CE	0.9 m	0.6 m



Attach securely protection earth to the ship's body.

The protection earth is required to the power supply to prevent electrical shock

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EQUIPMENT LISTS

Standard Supply

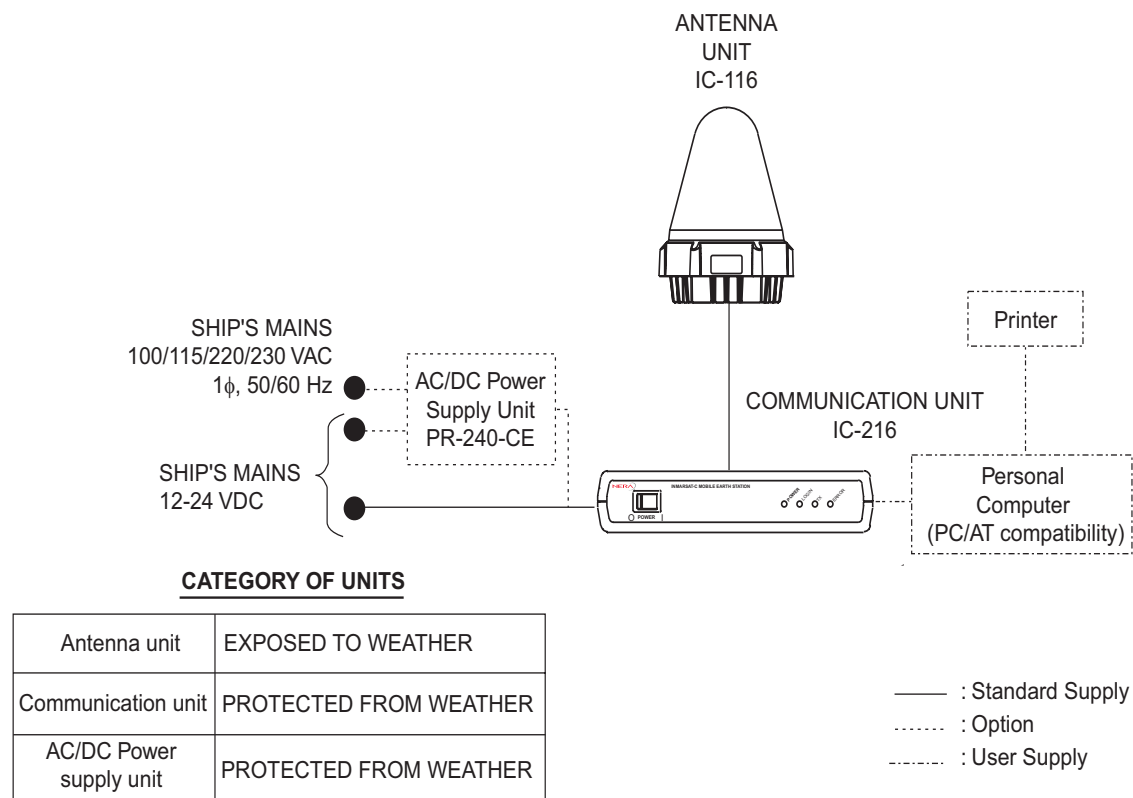
Name	Type	Code No.	Qty	Remarks
Antenna Unit	IC-116	-	1	
Communication Unit	IC-216	-	1	
Installation Materials*	CP16-02101	004-439-060	1 set	For 15/30 m antenna cable*
	CP16-02111	004-439-070		For 50 m antenna cable*
	CP16-02121	004-439-080		For 100 m antenna cable*
	TP58A15W-RG58	000-146-252	1	15 m antenna cable
	TP5FBAW-5DFBB	000-146-250		30 m antenna cable
	8D-FB-CV	000-117-599		50 m antenna cable
	12D-SFA-CV	000-138-866		100 m antenna cable
	CP16-02401	004-439-540		For communication unit*
Accessories*	FP16-00700	004-439-550	1 set	FD-ROM, FD (FP16-00601)*
Spare Parts*	SP16-01401	004-439-530	1 set	Fuse

Optional Supply

Name	Type	Code No.	Qty	Remarks
Cable assy	17JE-573-10	000-127-108	1	For PC connecting
AC/DC Power Supply Unit	PR-240-CE	-	1 set	w/CP24-00151*

*: See packing lists at the back of this manual.

SYSTEM CONFIGURATION

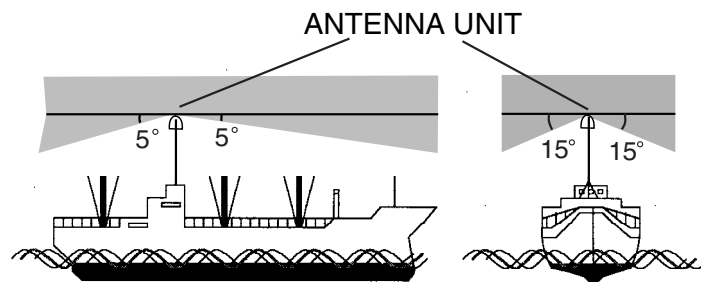


1. MOUNTING THE UNIT

1.1 Antenna Unit

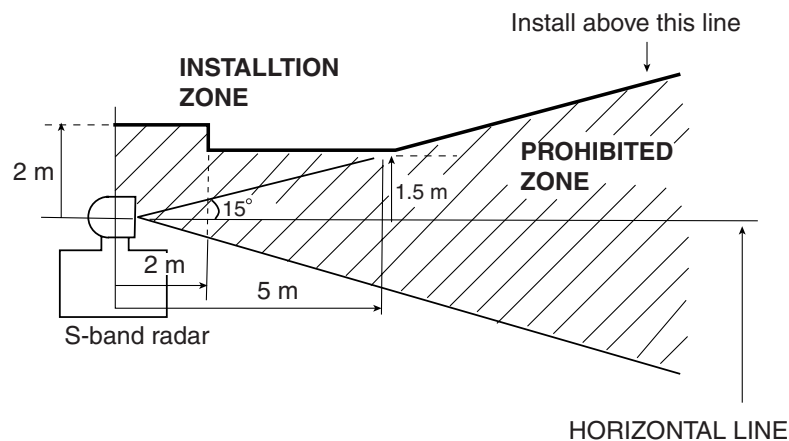
Mounting Location

- Mount the omnidirectional antenna unit high atop a mast clear of stays and the turning diameter of a radar antenna. The ideal mounting location would be where no obstacle appears in the fore and aft directions down to -5° and down to -15° in the port and starboard directions. This concept is illustrated in the figure below. Shadow sector of the antenna mast, whip antenna, etc. should be within 2 degrees at one meter from the antenna unit.



Antenna unit mounting location

- If both Inmarsat-A or B ship earth stations are installed, separate the Inmarsat-A/B antenna at least 8 m.
- Separate the antenna unit from an S-band radar as follows:



S-band radar and installation area

1. MOUNTING THE UNIT

- The allowable vibration level as specified by Inmarsat is as shown in the table below.

Allowable vibration level

Frequency	Level
2 to 10 Hz	2.54 mm Peak Amplitude
10 to 100 Hz	9.8 m/s ² Peak Acceleration

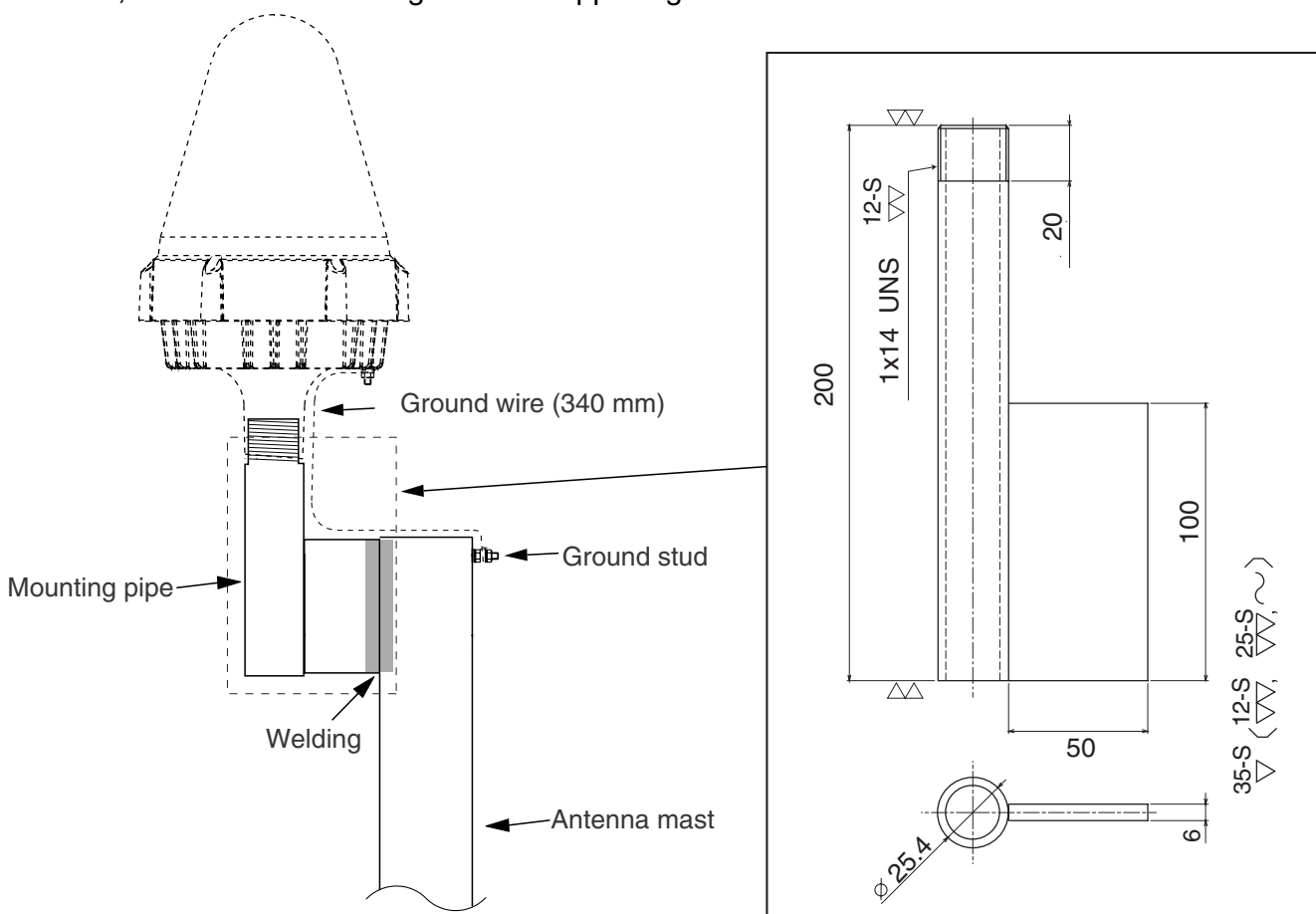
- Avoid the location near funnels and stacks; smoke and soot on the radome can lower signal level.
- Separate the antenna unit 5 m from HF, VHF or 27 MHz antenna.

Mounting

Fifteen, 30, 50 or 100 m antenna cable is available. Fifteen and 30 m cable has connectors on both ends, and one connector for 50/100 m cable. **Do not shorten these cables to prevent interference.** To mount the antenna unit, an exclusive pipe is necessary.

Locally prepare an antenna mast with a ground stud (M6 stainless steel bolt welded to antenna mast) and mounting pipe with threads and plate (See the outline drawing of the mounting plate shown below.) Weld the mounting pipe to the antenna mast.

The distance between the stud and the earth terminal on the antenna unit should be within 340 mm, which also is the length of the supplied ground wire.

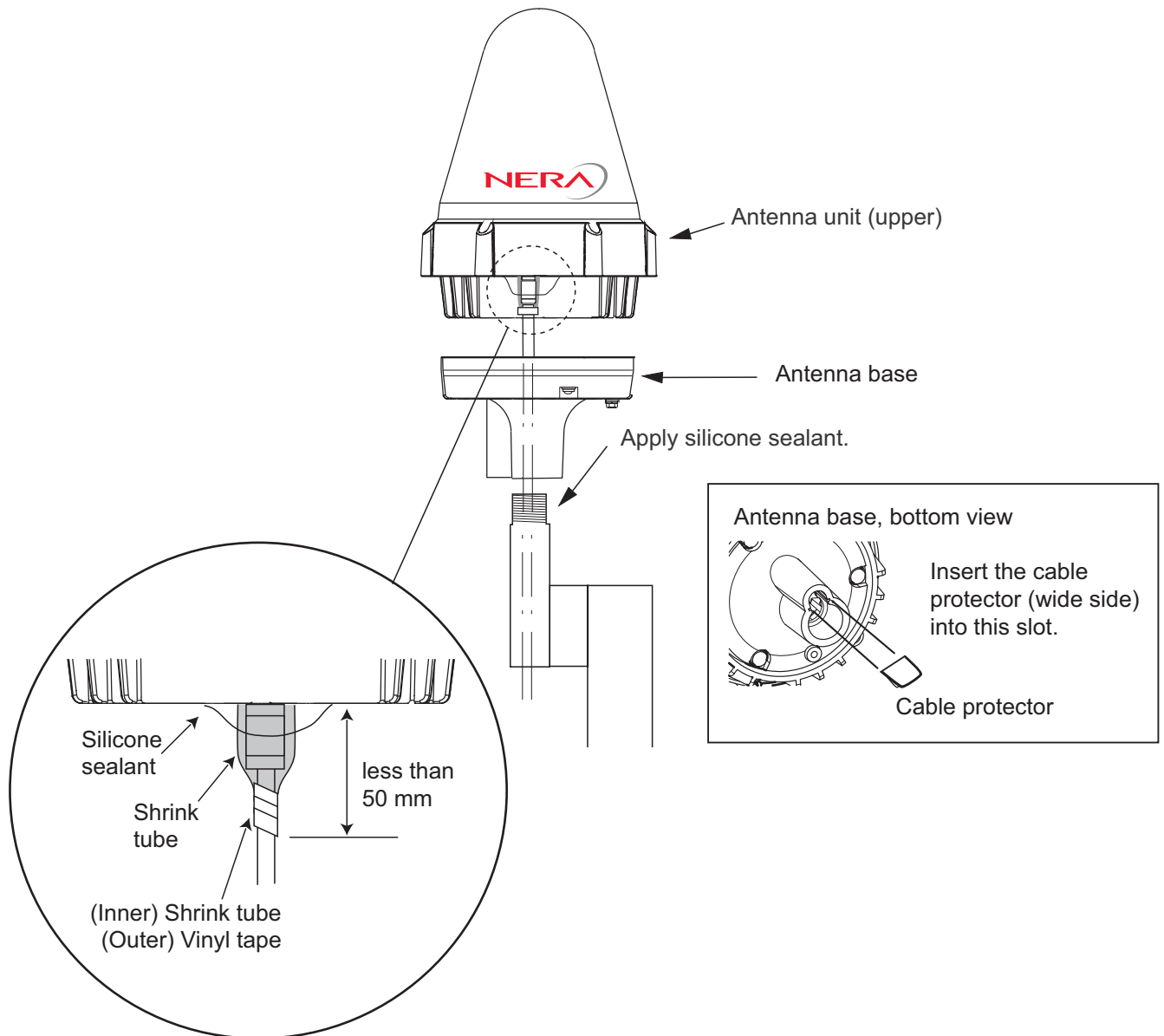


Mounting pipe and antenna mast

For 15 or 30 m cable

1. Apply silicone sealant (local supply) to the threads of the pipe.
2. Unscrew three screws to remove the antenna base from the antenna unit.
3. Pass the antenna cable through the pipe, antenna base in order.
4. Insert the cable protector (supplied) into the slot at the bottom of antenna base.
5. Screw the antenna base onto the antenna pipe by rotating the antenna base.
6. Pass the antenna cable through the shrink tube (supplied).
7. Attach the antenna cable to the connector at the bottom of the antenna unit (upper).
8. Slide up the shrink tube until it touches the bottom of the antenna unit (upper).
9. Heat the above shrink tube, and then apply silicone sealant around the upper edge of the tube. Also wind self-bonding tape around the lower edge of the shrink tube and then wrap vinyl tape over self-bonding tape.

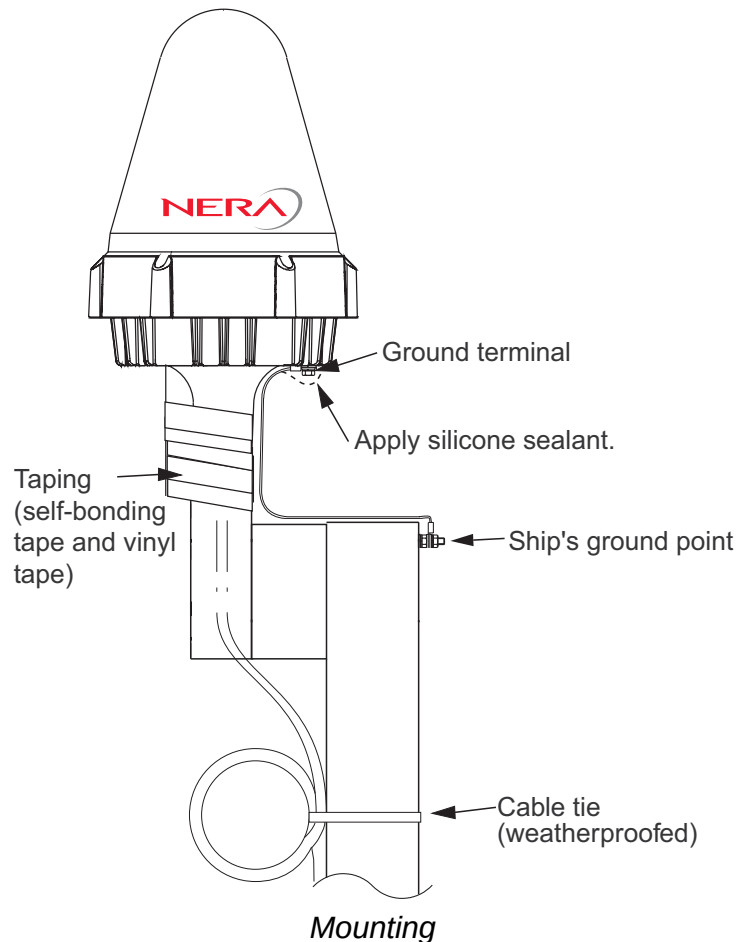
Note: Between the bottom of the antenna unit (upper) and the end of the taping should be less than 50 mm.



Antenna unit, passing the cable through the pipe

1. MOUNTING THE UNIT

10. Wrap self-bonding tape around the connection of antenna base and pipe, and then wind vinyl tape over self-bonding tape.
11. Remount the antenna unit (upper) on the antenna base. (Torque: $2.6 \text{ N}\cdot\text{m} \pm 10\%$)
12. Fix the ground wire RW-4747 (supplied) between the ground terminal on the antenna unit and the ship's ground point.



13. Apply silicone sealant (supplied) to the ground terminal and three screws at the bottom of antenna base.
14. Fix the antenna cable to the mast with a cable tie (local supply).

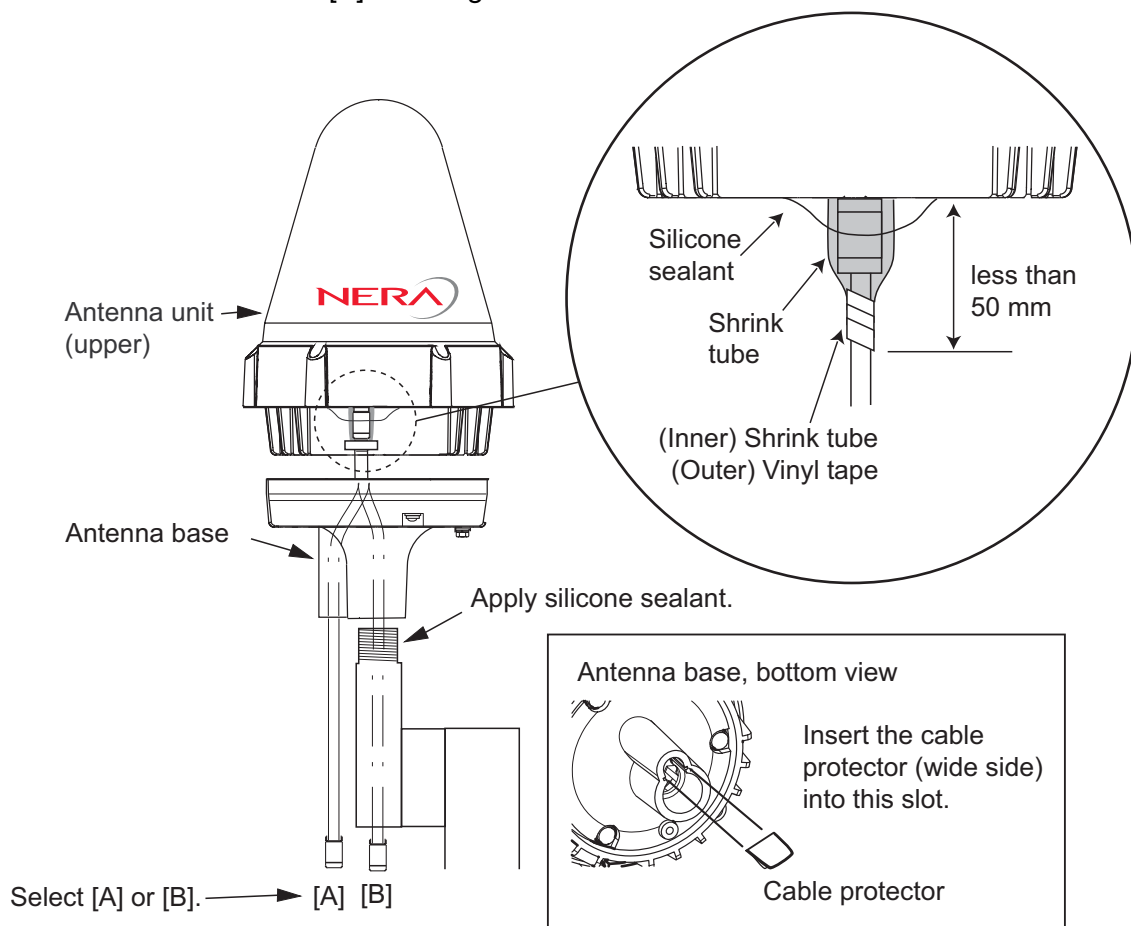
For 50 or 100 m cable

1. Apply silicone sealant (local supply) to the threads of the pipe.
2. Unscrew three screws to remove the antenna base from the antenna unit.
3. Pass the cable assy TPA5FB0.3NJ5FBA-5DFB (supplied, 300 mm) through the shrink tube (supplied).
4. Attach the above cable assy to the connector at the bottom of the antenna unit (upper).
5. Slide up the shrink tube until it touches the bottom of the antenna unit (upper).
6. Heat the shrink tube, and then apply silicone sealant around the upper edge of the tube, also wind self-bonding tape around the lower edge of the shrink tube and then wrap vinyl tape over self-bonding tape.

Note: Between the bottom of the antenna unit (upper) and the end of the taping should be less than 50 mm.

7. Insert the cable protector (supplied) in to the slot at the bottom of the antenna base.
8. Pass the antenna cable through the pipe, antenna base in order.

When laying the cable along side the pipe, put the cable aside to pass through the projection in the antenna base. See [A] in the figure shown below.

***Waterproofing***

9. Remount the antenna unit (upper) on the antenna base. (Torque: $2.6 \text{ N}\cdot\text{m} \pm 10\%$)
10. Screw the antenna unit onto the antenna pipe by rotating the antenna unit.
11. Wind self-bonding tape (supplied) at the connection of antenna base and pipe, and then wrap vinyl tape over self-bonding tape.
12. Fix the ground wire RW-4747 (supplied) between the ground terminal on the antenna

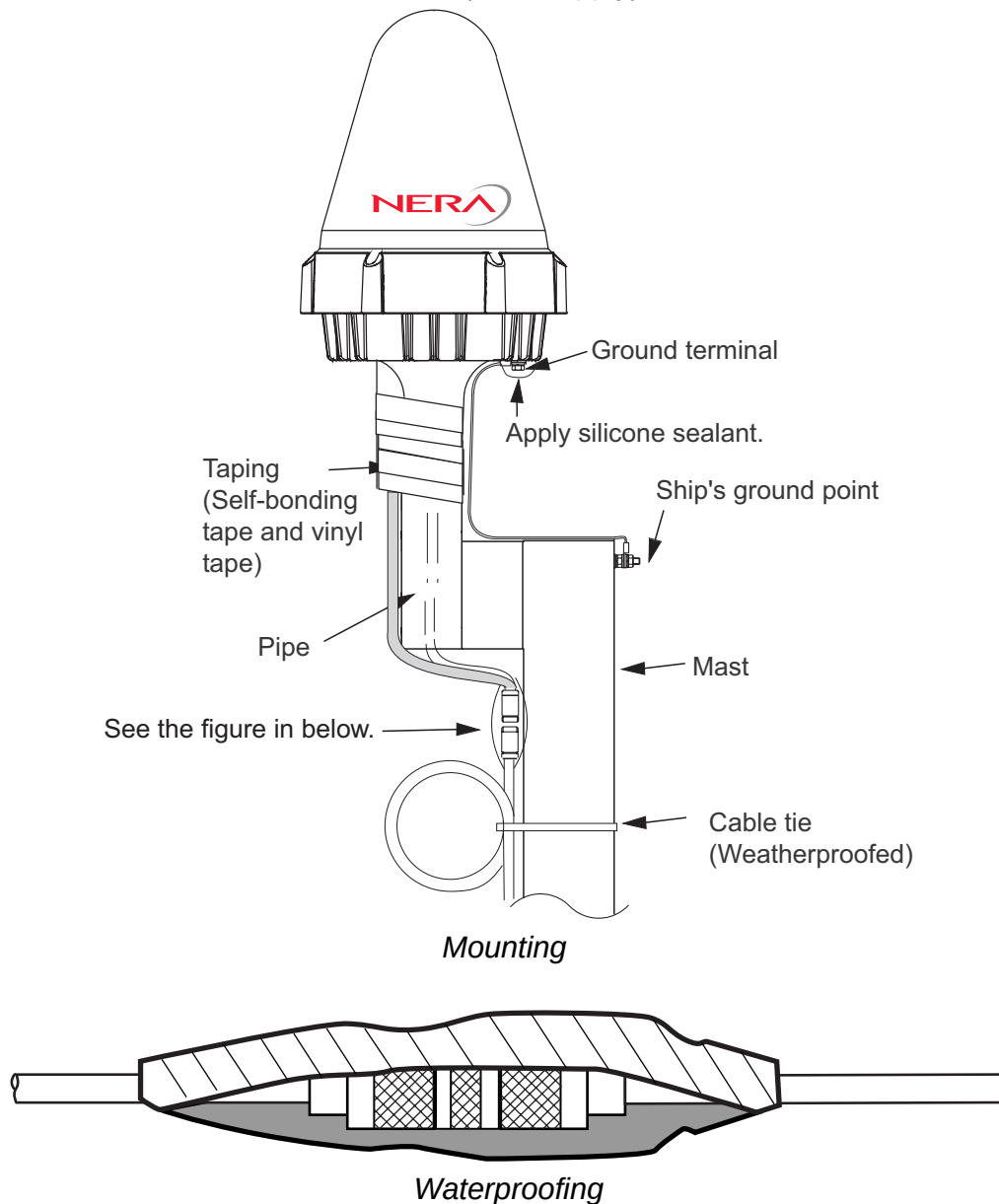
1. MOUNTING THE UNIT

unit and the ground stud on the mast.

13. Connect the antenna cable (50 or 100 m) and cable assy (attached at step 4).

14. Wrap the connector with self-bonding tape and then vinyl tape. Bind the cable end with a cable tie (local supply).

15. Fix the cable to the mast with cable tie (local supply).



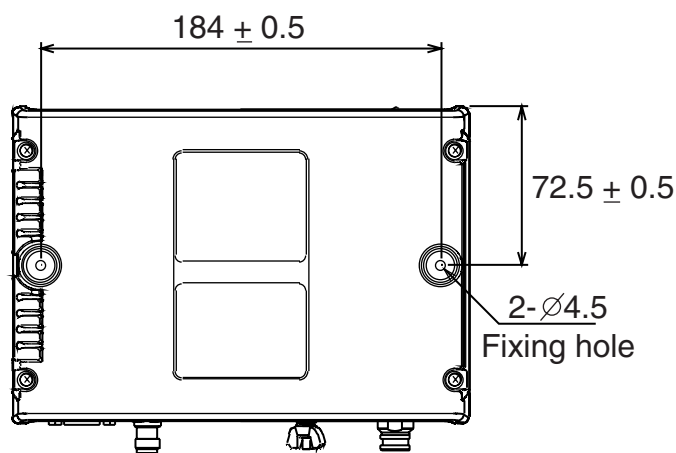
1.2 Communication Unit

Mounting

Select the following place to mount the communication unit.

- Provide sufficient ventilation.
- For maintenance and checking purpose, leave sufficient space at the sides and rear of the unit.

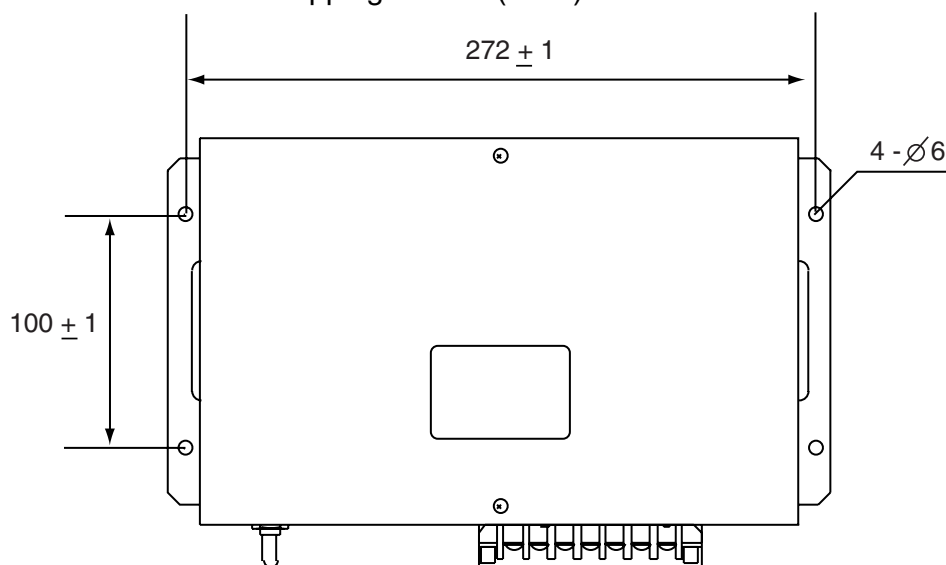
Use two tapping screws (4x40, supplied) to fix the communication unit. You can insert screws from the top and bottom side of the communication unit for bulkhead mounting. After the screwing, attach the cosmetic caps (2 pcs, supplied) to fixing holes to cover the screw head.



Communication unit, dimensions

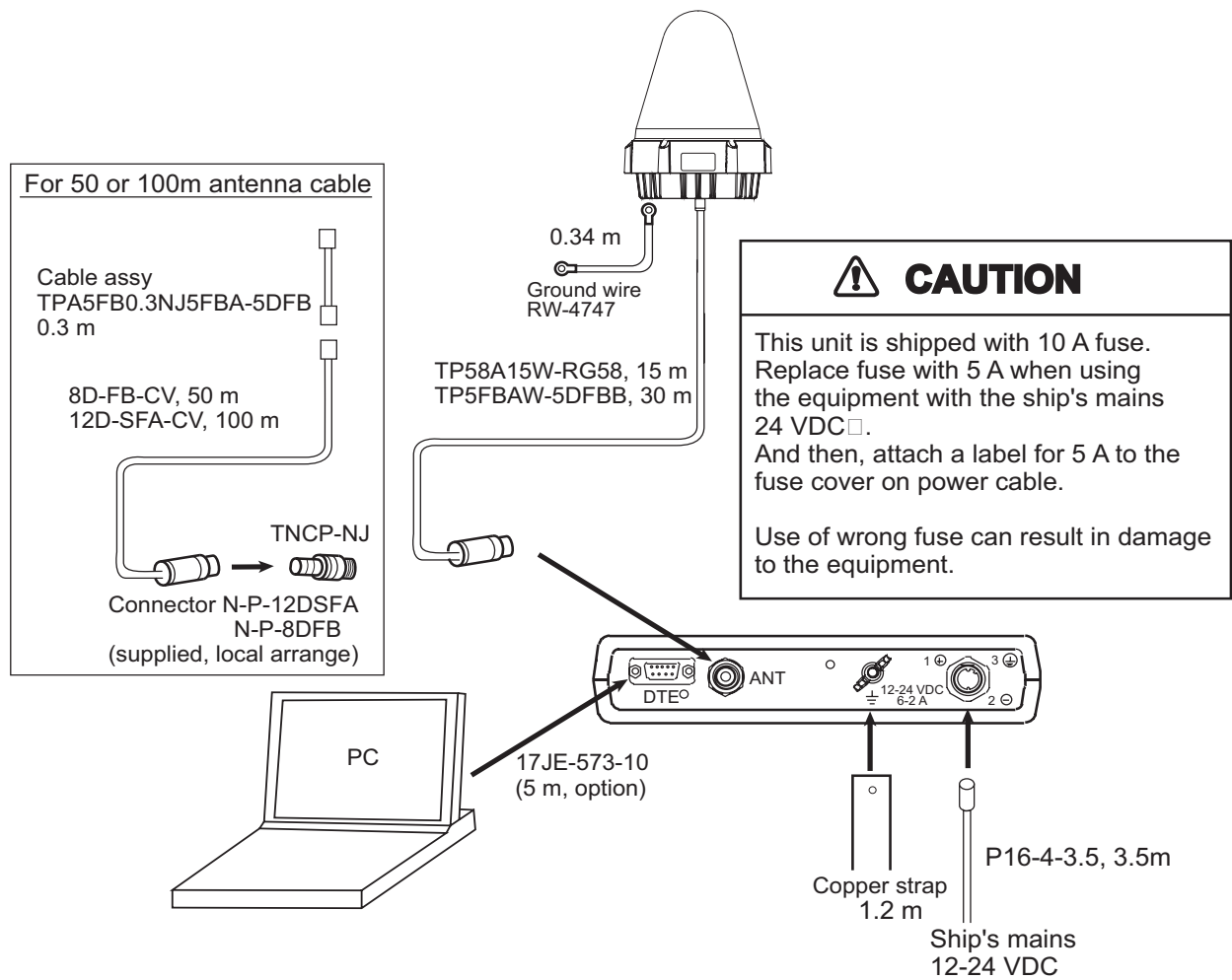
1.3 AC/DC Power Supply Unit PR-240-CE (option)

Fix the unit on a table with four tapping screws (4x16).



AC/DC power supply unit, dimensions

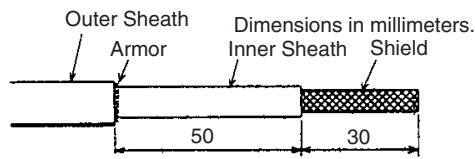
2. WIRING



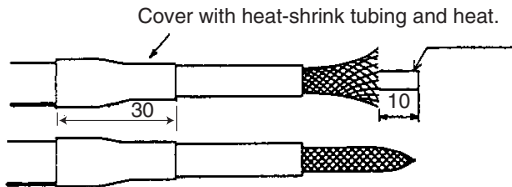
Wiring of Nera Mini-C

2.1 Antenna Cable Connector at the Terminal Unit

8D-FB-CV (50 m)

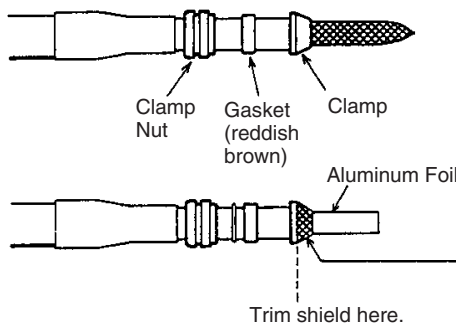


Remove outer sheath and armor by the dimensions shown left.
Expose inner sheath and shield by the dimensions shown left.



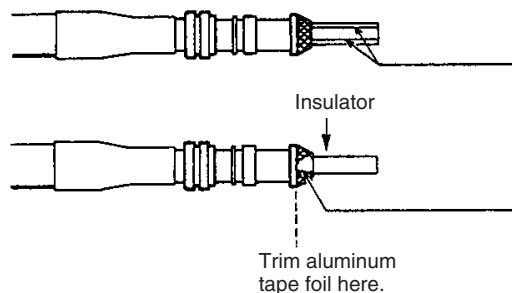
Remove insulator and core by 10 mm.

Twist shield end.



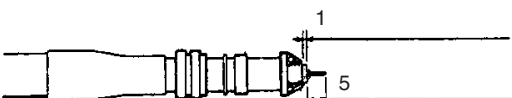
Slip on clamp nut, gasket and clamp as shown left.

Fold back shield over clamp and trim.



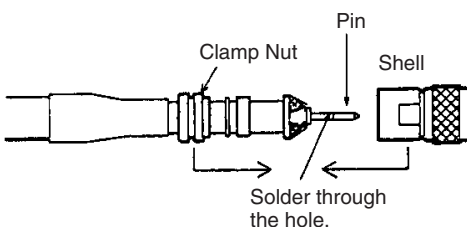
Cut aluminum foil at four places, 90° from one another.

Fold back aluminum tape foil onto shield and trim.



Expose the insulator by 1 mm.

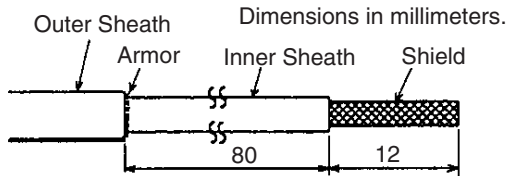
Expose the insulator by 5 mm.



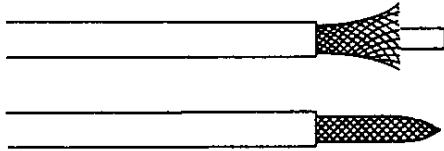
Slip the pin onto the conductor. Solder them together through the hole on the pin.

Insert the pin into the shell. Screw the clamp nut into the shell.
(Tighten by turning the clamp nut. Do not tighten by turning the shell.)

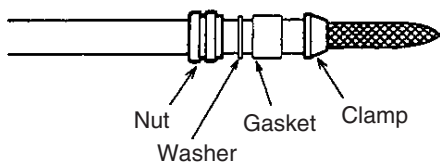
How to fabricate antenna cable 8D-FB-CV (50 m)

12D-SFA-CV (100)

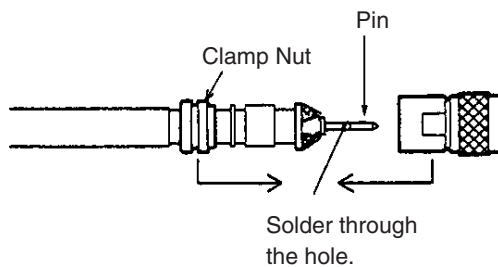
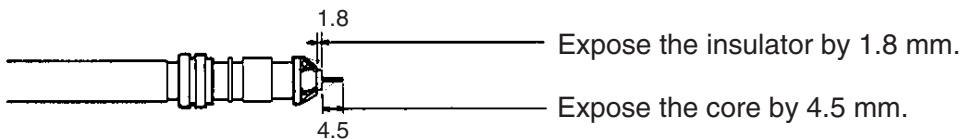
Remove outer sheath and armor by the dimensions shown left.
Expose inner sheath and shield by the dimensions shown left.



Twist shield end.



Slip on clamp nut, gasket and clamp as shown left.



Slip the pin onto the conductor. Solder them together through the hole on the pin.

Insert the pin into the shell. Screw the clamp nut into the shell.
(Tighten by turning the clamp nut. Do not tighten by turning the shell.)

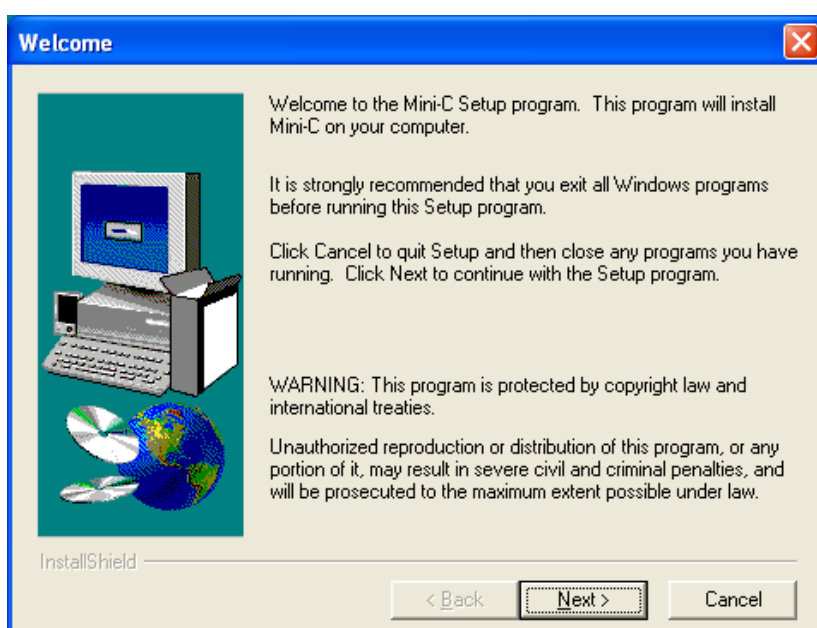
How to fabricate antenna cable 12D-SFA-CV

3. SETTINGS AFTER THE INSTALLATION

3.1 Installing Software

After installing the equipment, install the Nera Mini-C software (F16PC) in the PC as follows:

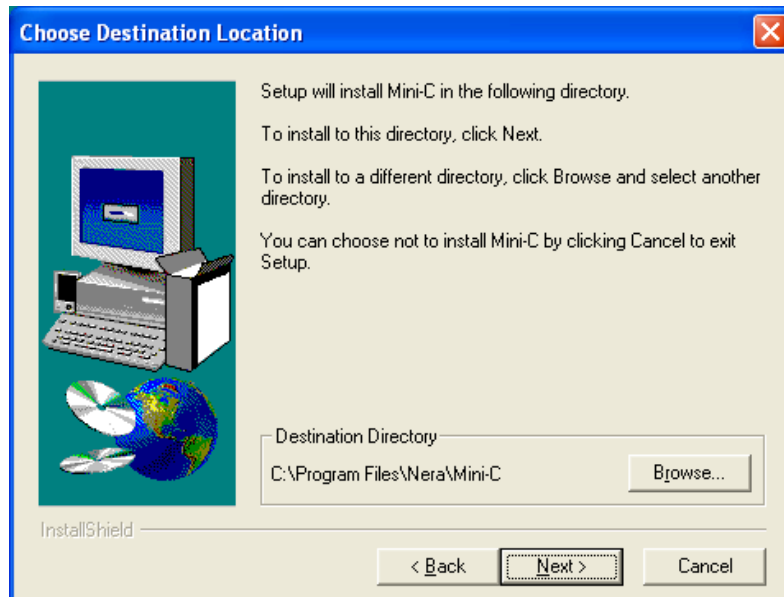
1. Turn on the PC.
2. Set FD-ROM in floppy disk drive.
3. Click the icon of "SETUP.EXE" in the floppy disk. The setup procedure begins, showing the welcome dialog box.



Welcome dialog box

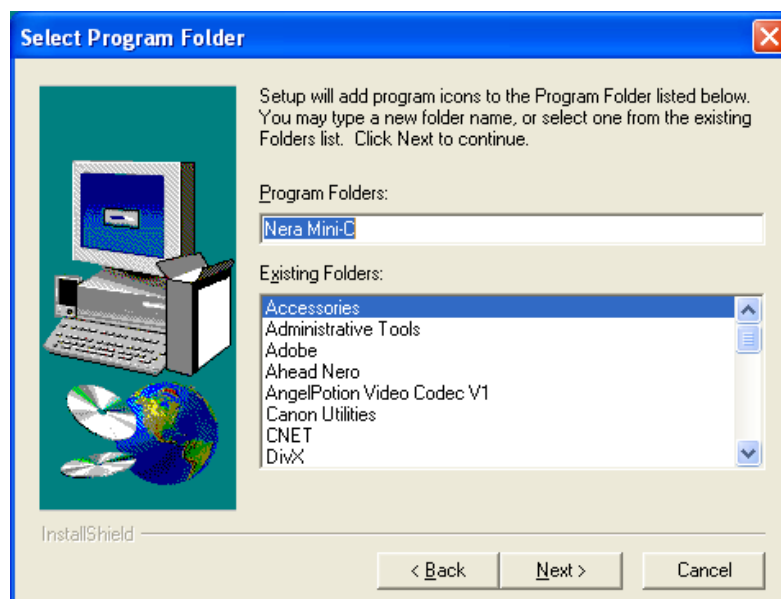
3. SETTINGS AFTER THE INSTALLATION

4. Click the [Next] button.



Choose destination location dialog box

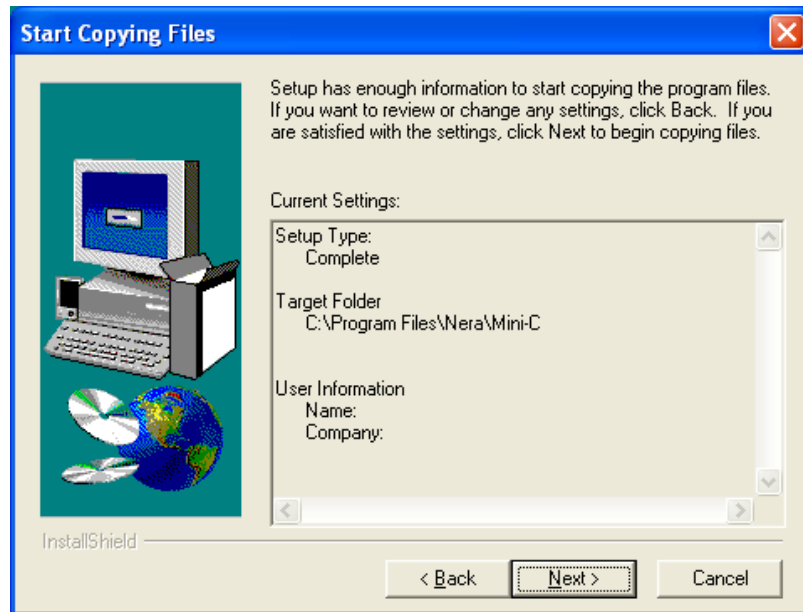
5. Click the [Next] button.



Select program folder dialog box

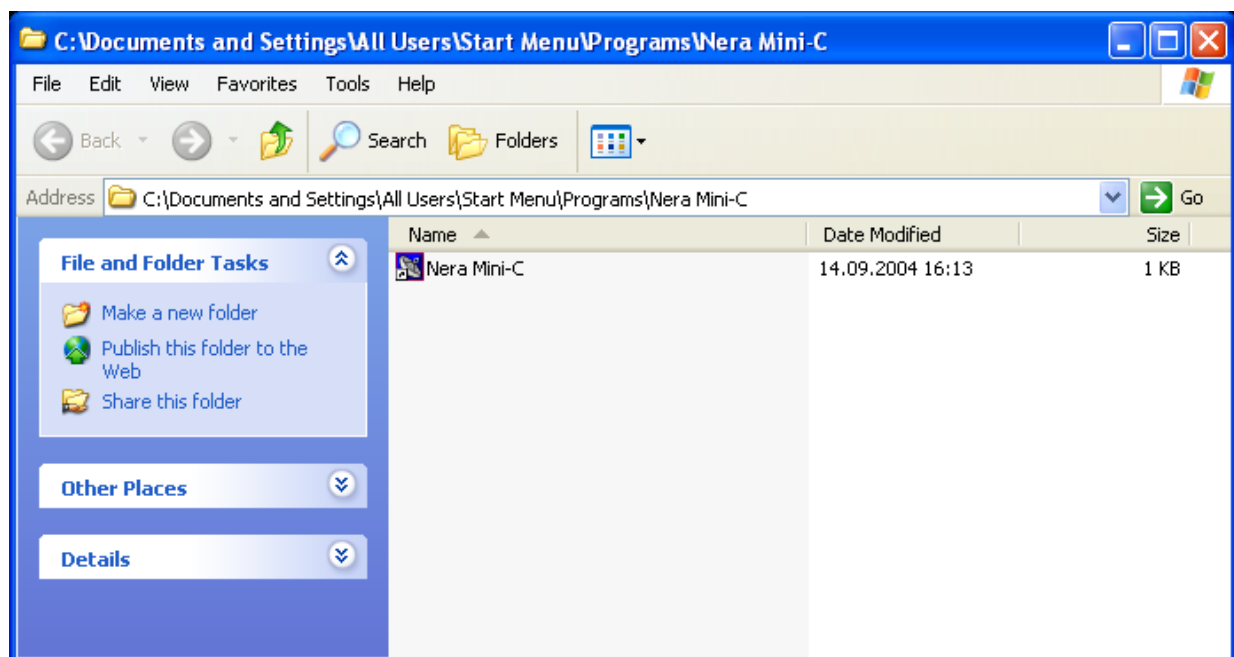
3. SETTINGS AFTER THE INSTALLATION

6. Click the [Next] button.



Start copying files dialog box

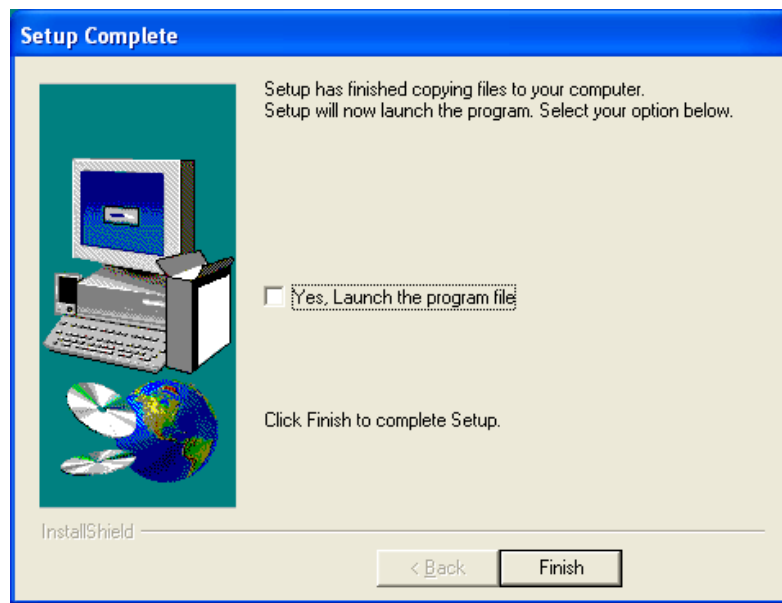
7. Click the [Next] button and the installation begins. When the installation is completed, the Nera Mini-C dialog box appears.



Nera Mini-C dialog box

3. SETTINGS AFTER THE INSTALLATION

8. Click the Close button (ⓧ) at the top right corner of the dialog box. The “Setup Complete” dialog box appears.



Setup complete dialog box

Note: If you want to launch the program file now check the box next to “Yes, Launch the program file.” The application will launch after the completion of step 9.

9. Click the [Finish] button. The Nera Mini-C PC application shortcut is created on the desktop.



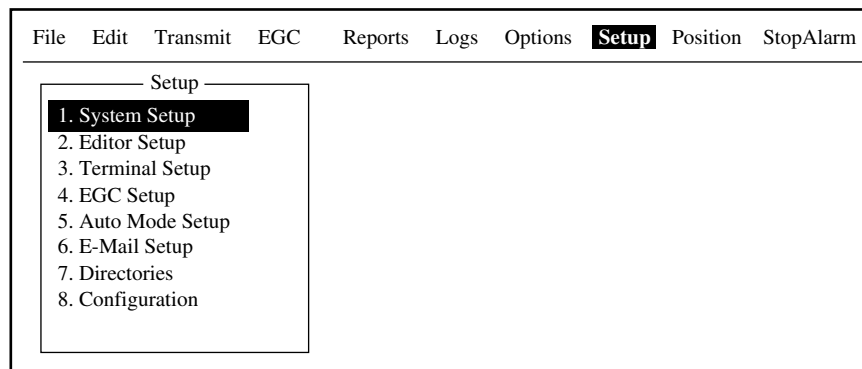
Nera Mini-C

Note: To uninstall the Nera Mini-C application see the operator’s manual for the PC.

3.2 Setting the IMN (Inmarsat Mobile No.)

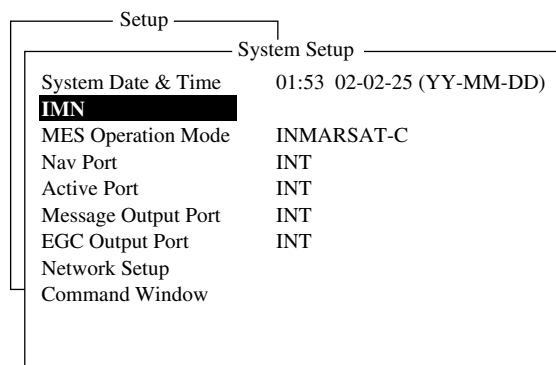
Set your IMN (Inmarsat Mobile No.) using the and PC as below.

1. Power on the communication unit and PC in order.
2. Double click [F16PC] on the screen to start the program.
3. Press the [F8] function key to show the Setup menu.



Setup menu

4. Press [1] key to display the System Setup menu.



System Setup menu

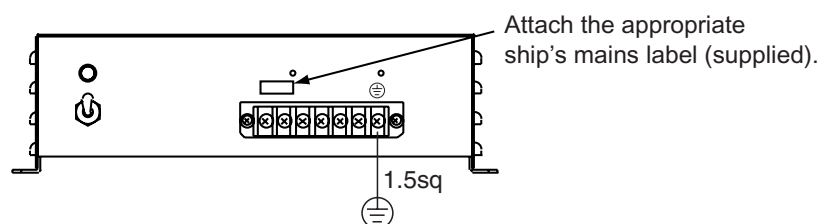
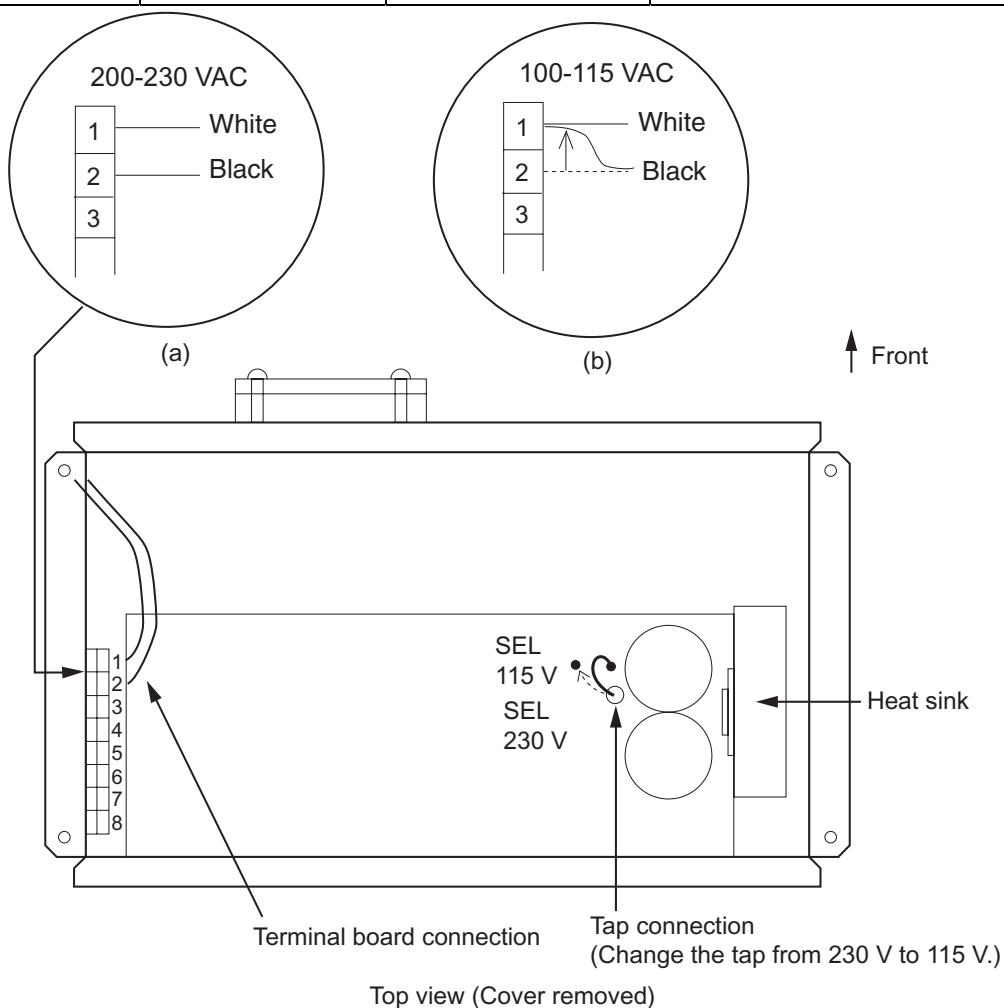
5. Confirm that the IMN is selected, and then press the [Enter] key.
The entering field appears.
6. Key in your IMN.
7. Press the [Enter] key.
8. Press the [Esc] key to escape from the entering field.
9. Press the [Enter] key.

To clear the IMN, press [I] [M] [N] in order while pressing the [Alt] key down at step 6. When using the Nera Mini-C for VMS (Vessel Monitoring System), DNID (Data Network ID) has to be downloaded via the LES (Land Earth Station). This arrangement is normally done by authority of VMS.

4. CHANGING SHIP'S MAINS SPECIFICATIONS

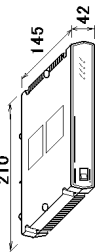
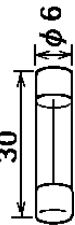
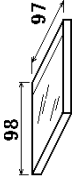
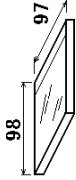
The power supply PR-240-CE (option) is shipped with 220 VAC (200-230 VAC) setting. If the ship's mains are 100 VAC – 115 VAC, change the tap connection and terminal connection as follows.

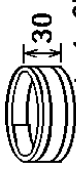
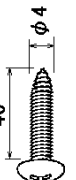
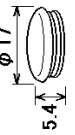
Ship's mains	Tap connection	Terminal board connection #1 & #2	Power supply label
100-115 VAC	SEL 115 V	b	AC100-115V 2.3-2.0A 1 ϕ 50/60kHz
200-230 VAC	SEL 230 V	a	AC200-230V 1.15-1.0 A 1 ϕ 50/60kHz



PACKING LIST IC-216 J/E

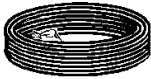
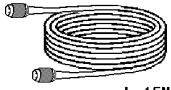
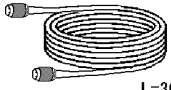
16AL-X-9851-2 1/1

NAME	OUTLINE	DESCRIPTION/CODE №	Q'TY
UNIT			
COMMUNICATION UNIT		IC-216	1
		000-043-419	
SPARE PARTS			
SP16-01401			
FUSE		FG80-A 5A AC125V	1
		000-549-064	
FUSE		FG80 10A AC125V	1
		000-549-065	
ACCESSORIES			
FP16-00700			
FLOPPY DISK ROM		16-5-0166	1
		004-439-740	
FLOPPY DISK		FP16-00601	1
		004-439-400	
INSTALLATION MATERIALS			
CP16-02401			
FUSE		FG80-A 5A AC125V	1
		000-549-064	
FUSE LABEL		03-153-1312-0	1
		100-292-140	

NAME	OUTLINE	DESCRIPTION/CODE №	Q'TY
COPPER STRAP		05-003-0031	1
		590-300-310	
TAPPING SCREW		4X40 SUS304	2
		000-809-373	
CAP		040-4025	2
		000-515-249	
POWER CABLE ASSY.		P16-4-3.5(3P)	1
		004-439-720	

(略図の寸法は、参考値です。 DIMENSIONS IN DRAWING FOR REFERENCE ONLY.)

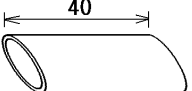
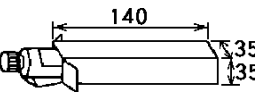
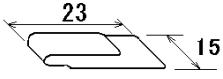
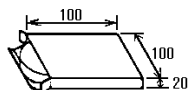
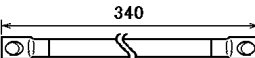


				CODE NO.		16AK-X-9405 -2
				TYPE		1/1
INSTALLATION MATERIALS		IC-116				
NO.	NAME	OUTLINE	DESCRIPTIONS		Q'TY	REMARKS
1	CABLE ASSY.	 L=100M	12D-SFA-CV *100M*		1	TO BE SELECTED
			CODE NO.	000-138-866		
2	CABLE ASSY.	 L=50M	8D-FB-CV *50M*		1	TO BE SELECTED
			CODE NO.	000-117-599		
3	CABLE ASSY.	 L=15M	TP58A15W-RG58 *15M*		1	TO BE SELECTED
			CODE NO.	000-146-252		
4	CABLE ASSY.	 L=30M	TP5FBAW-5DFBB *30M*		1	TO BE SELECTED
			CODE NO.	000-146-250		

(DIMENSIONS IN DRAWING FOR REFERENCE ONLY.)



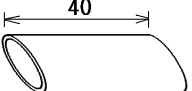
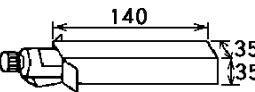
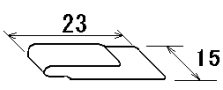
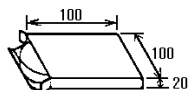
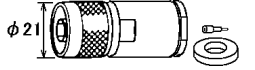
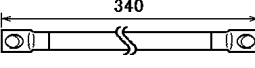
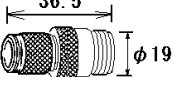
CODE NO.	004-439-060	16AK-X-9401 -2
TYPE	CP16-02101	1/1

INSTALLATION MATERIALS					
NO.	NAME	OUTLINE	DESCRIPTIONS	Q'TY	REMARKS
1	SCM2 SHRINK TUBING		07-1220 *40MM* CODE NO. 000-147-037	1	
2	SEALANT		1211 50G CODE NO. 000-854-118	1	
3	CABLE PROTECTOR		16-018-1251-1 CODE NO. 100-298-111	1	
4	SELF-BONDING TAPE		NO.15 CODE NO. 000-835-526	1	
5	GROUNDING WIRE		RW-4747-1 03S4747-2 CODE NO. 000-566-000	1	

(DIMENSIONS IN DRAWING FOR REFERENCE ONLY.)



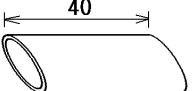
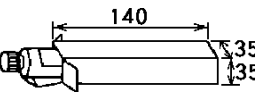
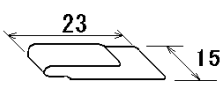
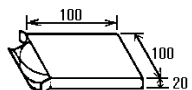
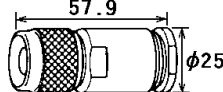
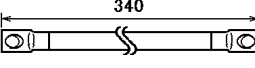
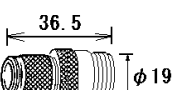
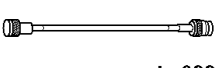
CODE NO.	004-439-070	16AK-X-9402 -2 1/1
TYPE	CP16-02111	

INSTALLATION MATERIALS					
NO.	NAME	OUTLINE	DESCRIPTIONS	Q'TY	REMARKS
1	SCM2 SHRINK TUBING		07-1220 *40MM*	1	
			CODE NO. 000-147-037		
2	SEALANT		1211 50G	1	
			CODE NO. 000-854-118		
3	CABLE PROTECTOR		16-018-1251-1	1	
			CODE NO. 100-298-111		
4	SELF-BONDING TAPE		NO.15	1	
			CODE NO. 000-835-526		
5	CONNECTOR		N-P-8DFB	1	
			CODE NO. 000-111-549		
6	GROUNDING WIRE		RW-4747-1 03S4747-2	1	
			CODE NO. 000-566-000		
7	CONNECTOR		TNCP-NJ	1	
			CODE NO. 000-146-177		
8	CABLE ASSY.		TPA5FB0.3NJ5FBA-5DFB	1	
			CODE NO. 000-146-251		

(DIMENSIONS IN DRAWING FOR REFERENCE ONLY.)



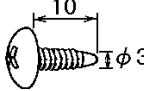
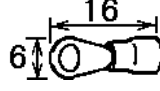
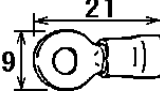
CODE NO.	004-439-080	16AK-X-9403 -2 1/1
TYPE	CP16-02121	

INSTALLATION MATERIALS					
NO.	NAME	OUTLINE	DESCRIPTIONS	Q'TY	REMARKS
1	SCM2 SHRINK TUBING		07-1220 *40MM* CODE NO. 000-147-037	1	
2	SEALANT		1211 50G CODE NO. 000-854-118	1	
3	CABLE PROTECTOR		16-018-1251-1 CODE NO. 100-298-111	1	
4	SELF-BONDING TAPE		NO.15 CODE NO. 000-835-526	1	
5	CONNECTOR		N-P-12DSFA CODE NO. 000-136-422	1	
6	GROUNDING WIRE		RW-4747-1 03S4747-2 CODE NO. 000-566-000	1	
7	CONNECTOR		TNCP-NJ CODE NO. 000-146-177	1	
8	CABLE ASSY.		TPA5FB0.3NJ5FBA-5DFB CODE NO. 000-146-251	1	

(DIMENSIONS IN DRAWING FOR REFERENCE ONLY.)



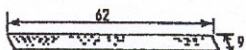
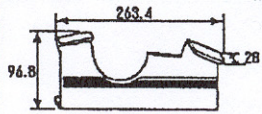
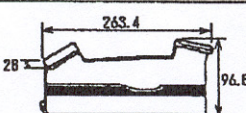
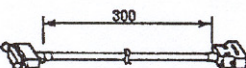
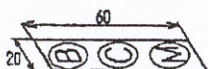
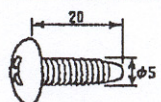
CODE NO.	004-438-890	16AK-X-9406 -0 1/1
TYPE	CP16-02201	

INSTALLATION MATERIALS					
NO.	NAME	OUTLINE	DESCRIPTIONS	Q'TY	REMARKS
1	TAPPING SCREW		3X10 SUS304	4	
			CODE NO. 000-802-079		
2	CRIMP-ON LUG		FV1.25-3	4	
			CODE NO. 000-538-113		
3	CRIMP-ON LUG		FV2-3	1	
			CODE NO. 000-108-424		

(DIMENSIONS IN DRAWING FOR REFERENCE ONLY.)



CODE NO.	004-441-780	16AC-X-9420 -1
TYPE	CP16-01200	1/1

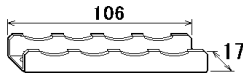
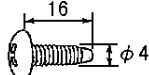
INSTALLATION MATERIALS		PP-510	PRINTER		
NO.	NAME	OUTLINE	DESCRIPTIONS	Q' TY	REMARKS
1	LABEL		16-007-6927-0 CODE NO. 100-222-480	1	COMPASS SAFE DISTANCE
2	PRINTER FIXTURE		CP16-00502 SPCC 2.5GY5/1.5 #5-N CODE NO. 004-434-410	1	
3	PRINTER FIXTURE		CP16-00501 SPCC 2.5GY5/1.5 #5-N CODE NO. 004-434-400	1	
4	CABLE ASSY.		16S0184 CODE NO. 000-138-539	1	/ FOR TERMINAL UNIT
5	POWER CABLE ASSY.		16S0084 (VCTF-0.75X3C *5M*) CODE NO. 000-132-249	1	
6	(INMAR) LABEL (INMAR)		16-007-6919-0 CODE NO. 100-217-010	1	
7	+TAPPING SCREW		5X20 SUS304 1 1/2 CODE NO. 000-802-081	4	

DWG NO.
C5609-M07- D

(DIMENSIONS IN DRAWING FOR REFERENCE ONLY.)



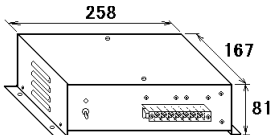
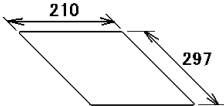
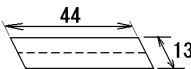
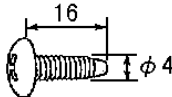
A-8

			CODE NO.	004-438-930	16AK-X-9407 -1 1/1	
			TYPE	CP16-02501		
INSTALLATION MATERIALS						
NO.	NAME	OUTLINE	DESCRIPTIONS		Q'TY	REMARKS
1	(1-3) CABLE CLAMP		16-018-6008-1		1	
			CODE NO.	100-301-101		
2	+TAPPING SCREW		4X16 SUS304 171		4	
			CODE NO.	000-802-080		

(DIMENSIONS IN DRAWING FOR REFERENCE ONLY.)

P A C K I N G L I S T

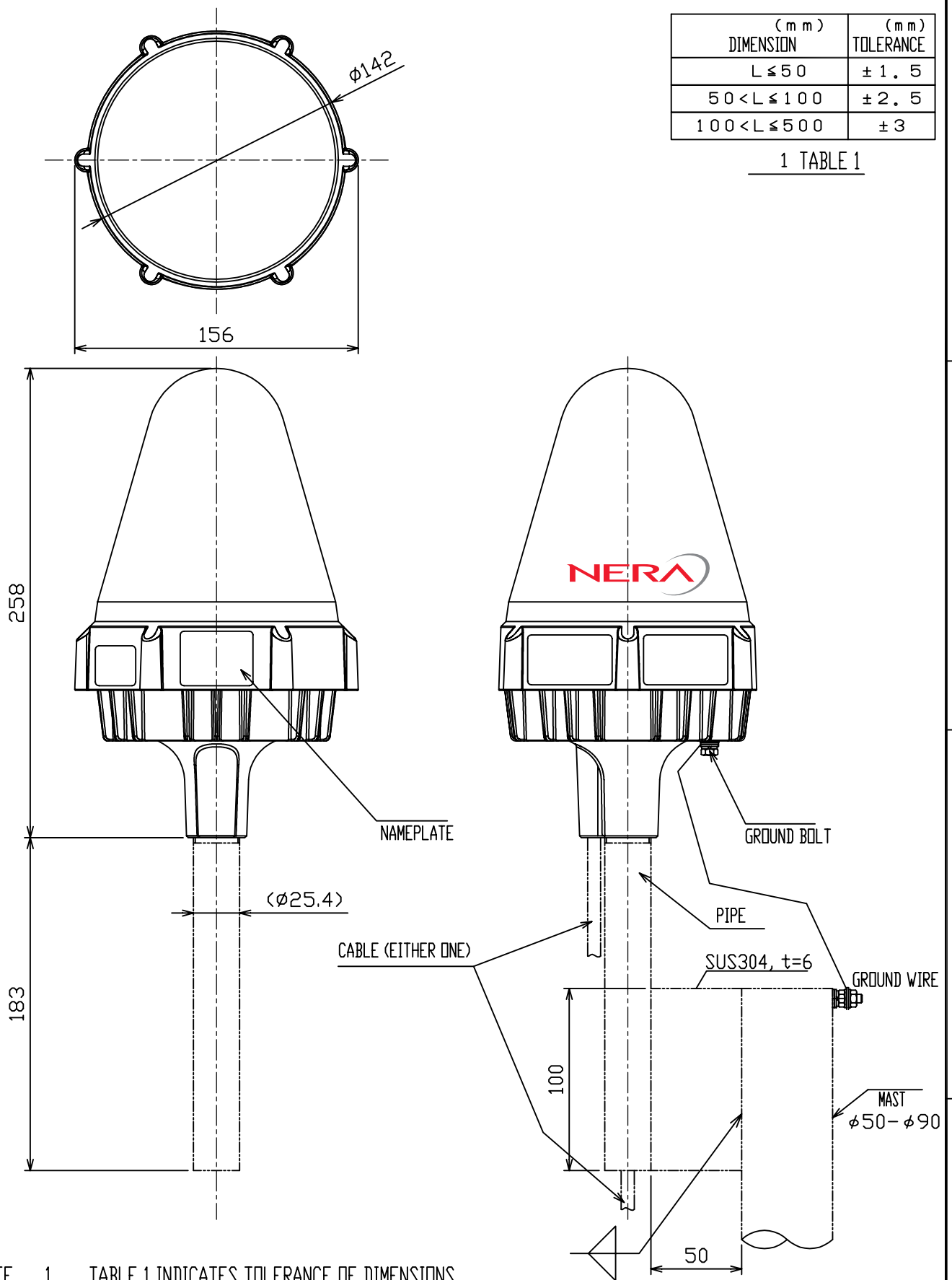
PR-240-CE

N A M E	O U T L I N E	DESCRIPTION/CODE No.	Q' TY
UNIT			
AC-DC POWER SUPPLY UNIT		PR-240-CE 000-053-879	1
INSTALLATION MATERIALS		CP24-00151	
PR-240-CE POWER MODIFICATION PROCEDURES		C52-00205-A 000-147-013	1
POWER LABEL		24-003-4101-3 100-299-773	1
+TAPPING SCREW		4X16 SUS304 000-802-080	4

(DIMENSIONS IN DRAWING FOR REFERENCE ONLY.)

(mm) DIMENSION	(mm) TOLERANCE
$L \leq 50$	± 1.5
$50 < L \leq 100$	± 2.5
$100 < L \leq 500$	± 3

1 TABLE 1

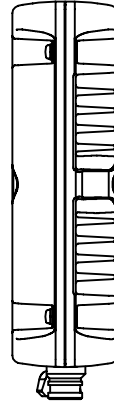
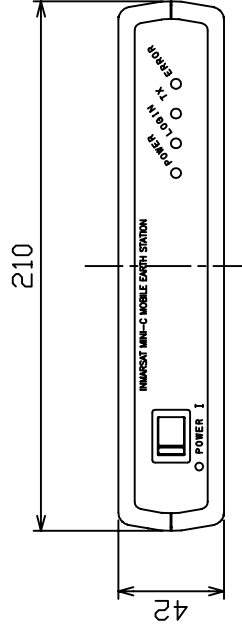
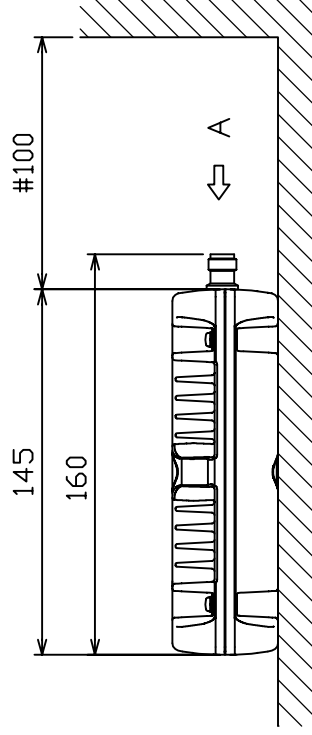
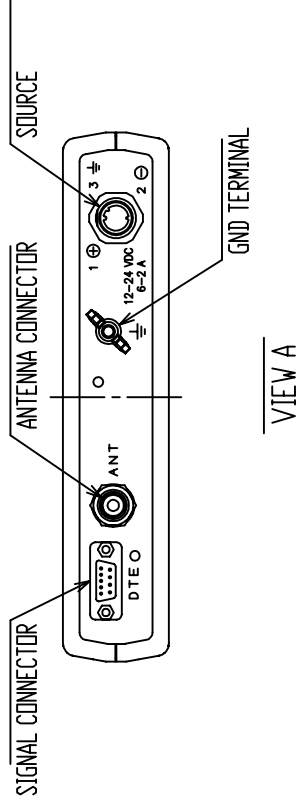
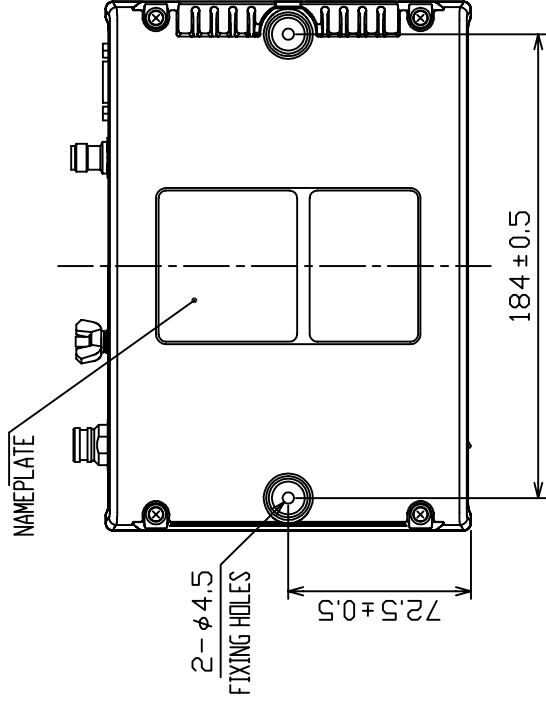


NOTE 1. TABLE 1 INDICATES TOLERANCE OF DIMENSIONS.

DRAWN	Jan. 7 '03	T.YAMASAKI	TITLE	IC-115/116
CHECKED	Jan. 7 '03	Y.KIMURA		
APPROVED	Jan. 7, '03	<i>Y. Kimura</i>	FELCOM 15/16	
SCALE	1/3	MASS 1.4 $\pm 10\%$ kg	MASS W/D FIXTURE PIPE.	NAME ANTENNA UNIT
DWG No.	C5635-G01-C	16-018-100G-1		OUTLINE DRAWING

DIMENSION	(mm)	TOLERANCE
L ≤ 50		± 1.5
50 < L ≤ 100		± 2.5
100 < L ≤ 500		± 3

1 TABLE 1



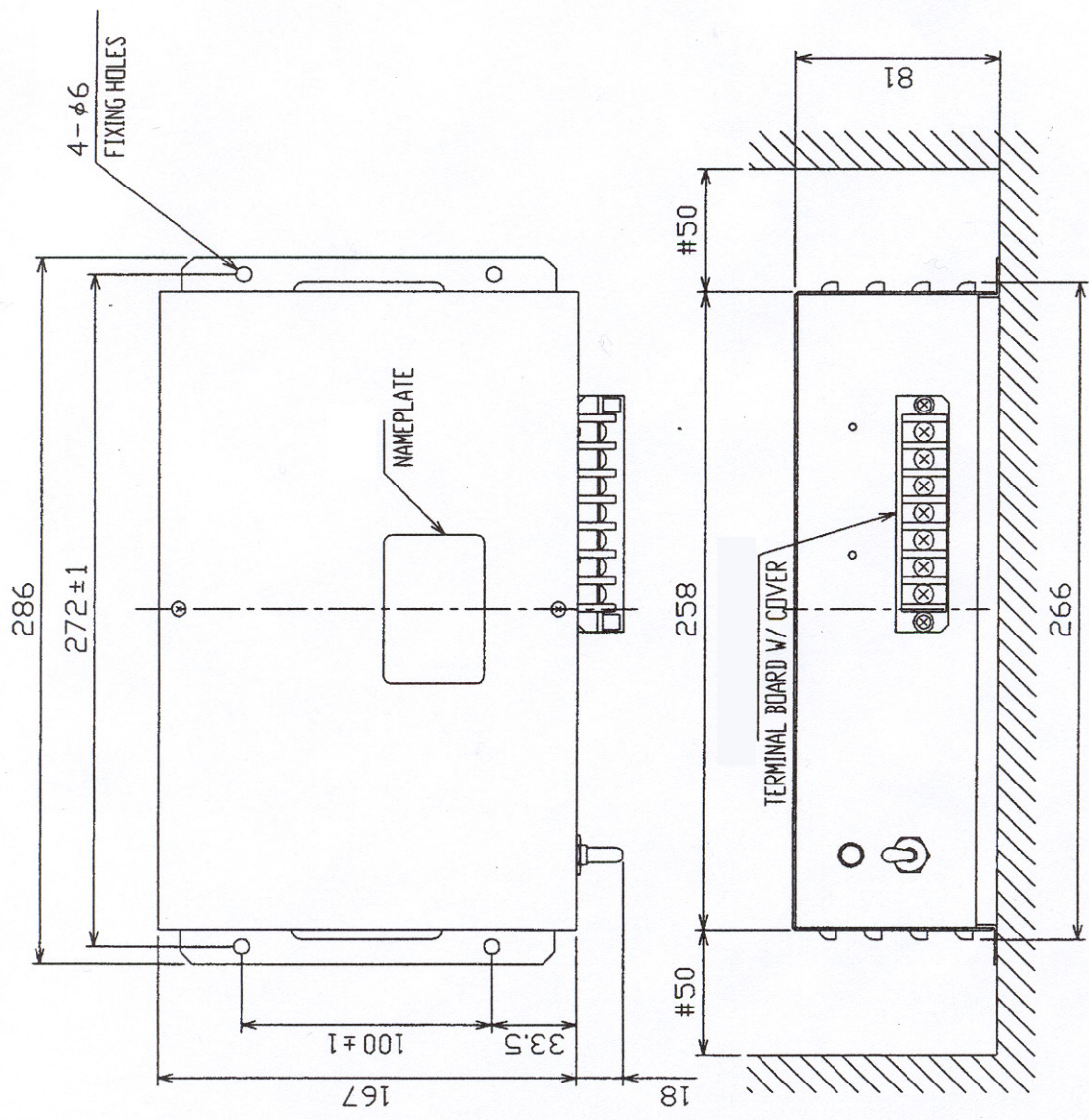
NOTE

1. #: RECOMMENDED SERVICE CLEARANCE.
2. TABLE 1 INDICATES TOLERANCE OF DIMENSIONS.
3. USE M4 BOLTS OR TAPPING SCREWS 4x40 FOR FIXING THE UNIT.

DRAWN	Dec. 19 '02	I. YAMASAKI	TITLE	IC-216
CHECKED	Dec. 20 '02	Y. KIMURA		
APPROVED	Dec. 20 '02	Y. Kimura	FELCOM 16	
SCALE	1/3	MASS 1.2 ±10%	NAME	COMMUNICATION UNIT
IMG No.	C5638-G01-C			16-018-200G-2
				OUTLINE DRAWING

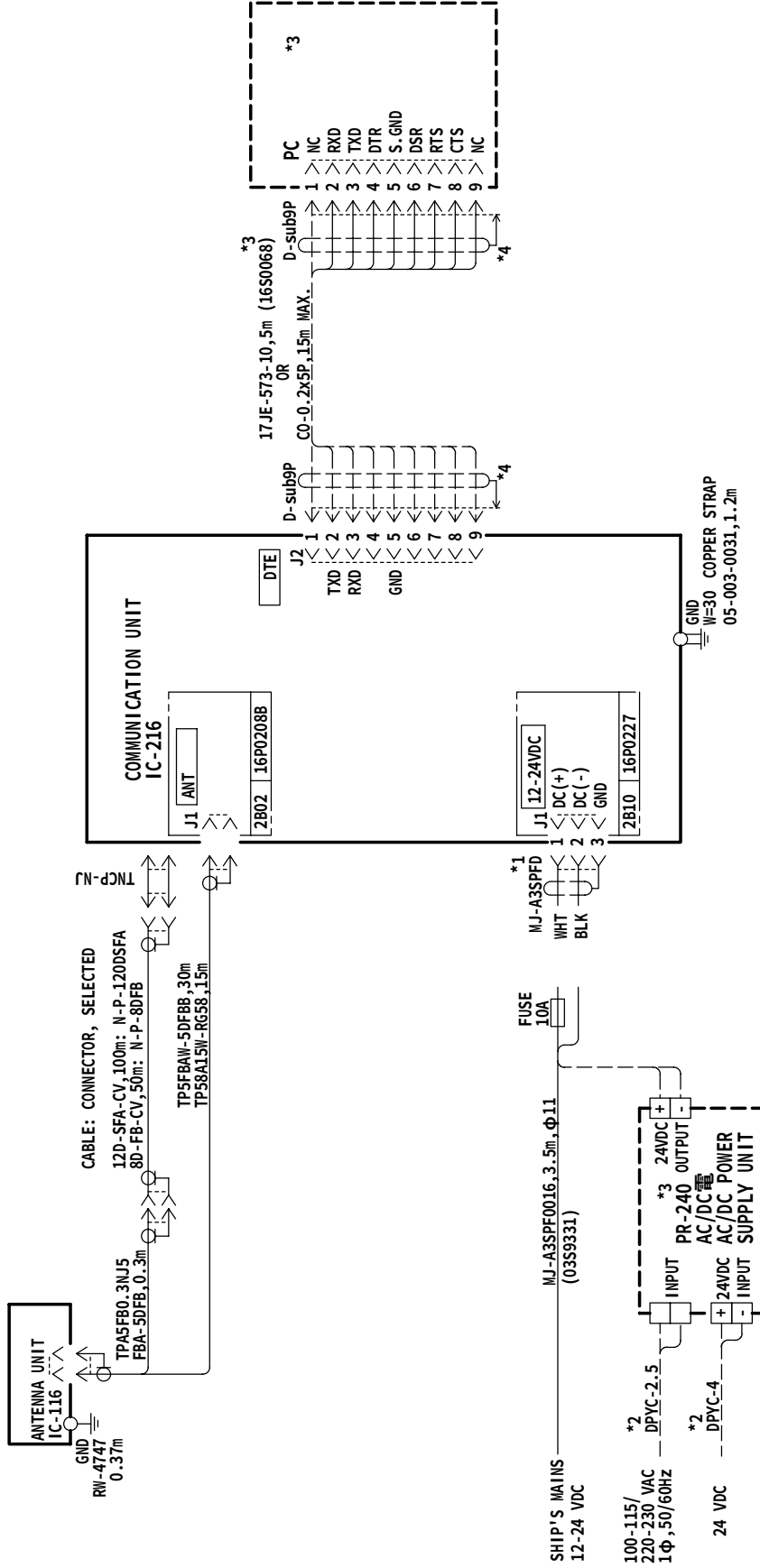
DIMENSION	TOLERANCE
L ≤ 50	± 1.5
50 < L ≤ 100	± 2.5
100 < L ≤ 500	± 3

1 TABLE 1



DRAWN	Mar. 8 '02	T. YAMASAKI
CHECKED	Mar. 8 '02	T. K.
APPROVED	Mar. 8 '02	Y. K.
SCALE	1/3	MASS 2.8 ± 0.1 kg
DWG No.	C5003-003-D	24-003-5005-2
TITLE	PR-240	AC/DC
NAME	AC/DC POWER SUPPLY UNIT	OUTLINE DRAWING

- NOTE
1. TABLE 1 INDICATES TOLERANCE OF DIMENSIONS.
 2. #: RECOMMENDED SERVICE CLEARANCE.
 3. USE TAPPING SCREWS 4x16 FOR FIXING THE UNIT.



NOTE

*1. FITTED AT FACTORY.

*2. SHIPYARD SUPPLY.

*3. OPTION.

*4. GROUND THRU CONNECTOR CLAMP.

CO-0.2x5P: CO-SPEW-SB-C 0.2x5P, 0.13.5

DRAWN	Oct. 7 '02	T. YAMASAKI	TITLE
CHECKED	Oct. 7 '02	Y. KIMURA	MES
APPROVED	Oct. 7 '02	Y. Kimura	
SCALE	MASS	kg	NAME
DWG No.	C5638-C01 - A		INTERCONNECTION DIAGRAM

Nera ASA

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